



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant(s) : **Haupt et al.**
Appl. No. : **09/090,035**
Filed : **06/10/1998**
Title : **Changer Apparatus for Information Discs**
Art Unit : **2153**
Examiner : **T. Kupstas**
Dkt. No. : **PHD 97-074A**

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BRIEF OF APPELLANTS

This Appeal Brief, pursuant to the Notice of Appeal filed August 6, 2002, is an appeal from the rejection of the Examiner dated April 8, 2002.

REAL PARTY IN INTEREST

U. S. Philips Corporation is the real party in interest.

RELATED APPEALS AND INTERFERENCES

None.

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STATUS OF CLAIMS

Claims 1 and 3-20 remain pending. Claim 2 has been canceled (check this). This Brief is

TRANSMITTAL OF APPEAL BRIEF (Large Entity)Docket No.
PHD 97-074AIn Re Application Of: **Haupt et al.**Serial No.
09/090,035Filing Date
6/10/98Examiner
T. KupstasGroup Art Unit
2153Invention: **CHANGER APPARATUS FOR INFORMATION DISCS****RECEIVED**
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TO THE ASSISTANT COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

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in support of an appeal from the rejection of claims 1 and 3-20.

STATUS OF AMENDMENTS

There are no After-Final Amendments which have not been entered.

SUMMARY OF INVENTION

The present invention discloses a disc changer for information discs. The disc changer has a stacking unit for stacking at least two information discs in at least two stacking positions, a read/write unit for reading information stored on the information discs and/or writing information on the information discs in a play position, and an eject position in which an information disc can be removed from the apparatus. See Specification, page 1, lines 19-27; and page 2, lines 12 - 13. The disc changer can be constructed with a smaller overall depth because transport of the information discs, from the eject position into a loading position of the stacking unit, is along a curve-shaped loading path. See Specification, page 1, lines 22-27. The curve-shaped loading path means that the loading path extends non-orthogonally with respect to the front side of the changer apparatus and, consequently, that between the eject position and the loading position the information discs perform a lateral relative movement parallel to the front side of the changer apparatus. Thus, a curve-shaped loading path also includes a linear loading path which extends obliquely with respect to the front side of the changer apparatus.

Regarding transport of the discs, each individual disc is initially brought to the eject position via external means, for example, by hand by a user. This particular disc is then moved into the loading position of the stacking unit along the curve-shaped loading path via transport

means. The loading position of the stacking unit is the position into which the individual disc is moved temporarily after transport from the eject position into a stacking position of the stacking unit. See Specification, page 1, lines 28-34.

The play position is located between the eject position and the loading position. This arrangement allows a disc to be transferred directly from the eject position into the play position without first traveling through the stacking unit. As a result, the changer apparatus can also be used as a single-information-disc playing apparatus, *i.e.*, the stacking unit may be ignored or even eliminated from alternative embodiments of the disc changer.

The play position is offset from an imaginary direct connecting line between the loading position and the eject position, enabling compact construction of the disc changer. This arrangement is noteworthy because usually the play position should be arranged such that the center of the stacking unit is situated outside the perimeter of the disc when the disc is in the play position. For instance, for a disc changer having an essentially square base, a play position, which is offset from a direct connecting line between the eject position and the loading position, enables better space utilization of the available mounting space.

The disc changer also has the play position located on the loading path, thus permitting the same transport means to be used for transport of the disc between the eject position and the loading position, as well as for transport between the eject position and the play position, and transport between the play position and the loading position. Additional transport mechanisms are not needed for disc transfer from the loading path to the play position.

The disc changer further has a first transport mechanism for transporting a disc between the eject position, the play position and the loading position, and a second transport mechanism

for transporting the disc into the stacking positions of the stacking unit. The first transport mechanism is adapted to move a disc in the loading plane, while the second transport mechanism is adapted to move a disc in a stacking direction which is oriented orthogonally to the loading plane.

ISSUES

Whether claims 1, 3-6, 9, 11, and 20 are unpatentable under 35 U.S.C. §103(a) over GB 2296811 to Shindo. Whether claims 7, 8 and 12 are unpatentable under 35 U.S.C. §103(a) over Shindo in view of GB 0391424 to Umesaki. Whether claim 10 is unpatentable under 35 U.S.C. §103(a) over Shindo in view of US 5508994 to Nakamichi *et al.* (hereinafter, “Nakamichi”). Whether claims 13-18 are unpatentable under 35 U.S.C. §103(a) over Shindo in view of JP 6-131793 to Clarion.

GROUPING OF CLAIMS

Claims 1 and 3-20 do not stand or fall together.

ARGUMENT

1. Shindo

The prior art cited in the Final Office Action does not teach each and every feature of claim 1. Specifically, Shindo does not teach or suggest a changer apparatus for information discs comprising: “a stacking unit”; “a read/write unit”; “an eject position”; and “transport means for transporting the information discs from the eject position into a loading position along a curve-

shaped loading path, the loading position being a position for loading discs from the loading path of the transport means into the stacking positions of the stacking unit; and in which the play position is along the loading path between the eject position and the loading position.”

It is noted herein that Shindo’s invention relates to an information disc handling apparatus, capable of ejecting, storing and reading an information disc. However, Appellants provide the following six reasons why the Examiner has not established a *prima facie* case of obviousness in relation to claim 1.

A first reason why the Examiner has not established a *prima facie* case of obviousness in relation to claim 1 is that the Examiner alleges that Shindo teaches all of the elements of claim 1, except that Shindo “does not disclose having the play position between the eject position and the loading position.” See paper no. 21, page 2. The Examiner notes that “it is **unclear** [emphasis added] as to whether or not the tray 12 can rotate directly to the player or has to go through the loading position; see col. 6, lines 13-26, and page 7, line 22 col. 9, line 14.” See paper no. 21, page 2. In summary, Appellants contend that the Examiner’s admission that the feasibility of modifying Shindo to mimic Appellants’ invention is “unclear” (since the Examiner admits that it is possible that the player **has to go** through the loading position) is itself *prima facie* evidence that it may not be possible or practical to modify Shindo and so derive Appellants’ invention.

A second reason why the Examiner has not established a *prima facie* case of obviousness in relation to claim 1 is that the Examiner further alleges that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the disc player of Shindo with a play position between the eject and loading positions. The Examiner relies on the following rationale to support his theory: “It would have been desirable to have immediately

accessed the disc player without waiting for an intermediate position, thereby saving time. One of ordinary skill would have been motivated by the desire to immediately access the disc player to reproduce discs to have provided the play position between the eject position and the loading position in the disc player of Shindo, thereby having provided an alternative arrangement to the current layout where one would merely switch the locations of the loading position and the disc player thereby providing immediate access to the disc player.” Appellants contend that the Examiner’s rationale indicates use of unacceptable hindsight construction., since Shindo does not present any motivation to rearrange the sequence in which an information disc is transported. Rather, Shindo indicates that alternative embodiments may be possible which “may be devised for mounting the trays or for moving the stack of trays vertically or for pivoting the trays to the different positions. And rather than move the stack of trays with respect to the tray driver and disc reader it is possible to devise systems in which these elements are moved with respect to the stack of trays.” See Shindo, page 10 lines 8-14. Thus, although Shindo contemplates alternative embodiments, these alternative embodiments do not include completely rearranging the components of the apparatus so that the sequence may be changed.

A third reason why the Examiner has not established a *prima facie* case of obviousness in relation to claim 1 is that to alter the sequence disclosed in Shindo would destroy the teaching of Shindo. The sequence in Shindo begins with the information disc in the eject position, from which the information disc moves to the store position, and finally to the read position. An information disc, in the Shindo apparatus, therefore is moved back and forth between these three positions in that particular order, namely, eject-store-read. In Shindo, the sequence in which the operational positions are located is a different sequence from that claimed in Appellants’ claim 1.

Shindo is completely silent regarding any other possible sequence. Thus, modification of Shindo, as suggested by the Examiner, would make it impossible to implement the eject-store-read sequence taught by Shindo.

A fourth reason why the Examiner has not established a *prima facie* case of obviousness in relation to claim 1 is that the figures showing the construction of the apparatus, Figures 1 and 2, indicate that a sequence in which an information disc is passed directly from the eject position to the read position (*i.e.*, in a counterclockwise direction) is not possible, due to the arrangement and location of various components, and because of the diameter of the information disc in relation to the space available between certain components in the apparatus. For instance, the information disc is too wide to fit between the vertical shaft 14 and the right vertical wall of the disc handling mechanism 10 as depicted in Figure 1. Further, for the information disc to gain access to the disc reader unit 17, numerous elements would have to be relocated to allow passage of the information disc, assuming the information disc could in fact fit between the vertical shaft 14 and the side of the disc handling mechanism 10.

A fifth reason why the Examiner has not established a *prima facie* case of obviousness in relation to claim 1 is related to the information disc transport mechanism. Appellants' apparatus relies on stacking and transporting the information discs themselves, rather than manipulating a tray or similar device which may contain an information disc. For example, Shindo relies on a plurality of trays, each of which may contain a single disc, to transport the discs. Each of these trays, along with their enclosed disc, are moved vertically and horizontally to the read unit. See Shindo, page 5, line 27 to page 6, line 12, and Figures 1 and 2. In contrast, Appellants' apparatus provides for storage and transport of the discs themselves, by acting upon the disc via transport

wheels and guides. See Specification page 10, lines 28-32. Each disc is also stored in a holder compartment in a stacking position without the necessity of a tray to enclose the disc. See Specification page 8, lines 2-12. Shindo does not indicate that an apparatus and method of using transport wheels and guides to transport an information disc was known to one of ordinary skill in the art. Thus Appellants contend that the Examiner has not established that the use of transport wheels and guides which act directly on the information disc was known by one of ordinary skill in the art.

A sixth reason why the Examiner has not established a *prima facie* case of obviousness in relation to claim 1 is related to the fact that Shindo's disclosure is directed to an apparatus wherein a user may "insert or remove a disc from among those stored in the handling system without interrupting any disc then being read by the system." See Shindo, page 2, lines 4-8; page 3, lines 11-14; and page 9, line 30 to page 10, line 2. In Appellants' invention, however, claim 1, lines 10-11 state: "the play position is along the loading path between the eject position and the loading position." Thus, an information disc must pass through the read (*i.e.*, play) location before it reaches the storage (*i.e.*, loading) location, so that the desired characteristic of uninterrupted disc readability as addressed in Shindo is not feasible. Thus, Shindo's disclosure teaches away from Appellants' invention.

In summary, Shindo does not teach or suggest "transport means for transporting the information discs from the eject position into a loading position along a curve-shaped loading path, the loading position being a position for loading discs from the loading path of the transport means into the stacking positions of the stacking unit; and in which the play position is along the loading path between the eject position and the loading position." Accordingly, Appellants

contend that claim 1 is not obvious relative to Shindo.

In light of any of the preceding six reasons why the Examiner has not established a *prima facie* case of obviousness in relation to claim 1, Appellants maintain that claim 1 is unobvious over Shindo and meets the criteria for allowance. Additionally, Appellants maintain that claims 3-6, 9 and 11, which depend from claim 1, meet the criteria for allowance.

Inasmuch as claims 3-6, 9 and 11 have patentable features not included in claim 1, Appellants contend that claims 3-6, 9 and 11 are in condition for allowance regardless of whether or not claim 1 is in condition for allowance. Appellants note patentable feature of claims 3-6, 9 and 11 as follows.

Claim 3 includes the patentable feature of: "wherein the play position is offset from a direct connecting line between the loading position and the eject position." Appellants traverse the Examiner's position that the aforementioned feature is taught in Shindo. The Examiner stated that "Shindo discloses a[n] apparatus wherein the play position is offset from the direct connecting line between the loading position and the eject position." Appellants contend that Shindo discloses an apparatus wherein the play position is not offset from the direct connecting line between the loading position and the eject position, because, as noted *supra* with respect to claim 1, the play position is not located between the loading position and the eject position. Rather, the loading position is between the eject position and the read position. Alternatively, Appellants maintain that claim 3 is allowable because claim 3 depends from claim 1 which, as argued *supra*, is allowable.

Claim 4 includes the patentable feature of: "wherein the play position is disposed on the loading path." Appellants disagree with the Examiner's stated position that the aforementioned

feature is disclosed in Shindo. As explained *supra*, Shindo does not teach or suggest this arrangement or sequence. Appellants maintain that claim 4 is allowable because claim 4 depends from claim 1 which, as argued *supra*, is allowable.

Claim 5 includes the patentable feature of: "a first transport mechanism for transporting the information discs between the eject position, the play position and the loading position, and a second transport mechanism for transport of the information discs from the loading position into the stacking positions of the stacking unit." Appellants disagree with the Examiner's stated position that the aforementioned feature is disclosed in Shindo. As explained *supra*, Shindo does not teach or suggest an obvious variant of an information disc transport mechanism which transports information discs in the stated sequence. Appellants maintain that claim 5 is allowable because claim 5 depends from claim 1 which, as argued *supra*, is allowable.

Claim 6 includes the patentable feature of: "wherein the first transport mechanism includes at least a first and a second guide for the disc edge of the information disc, the first guide includes a groove for supporting the disc moving along the loading path and the first guide is movable in the loading plane, the second guide includes at least one rotationally drivable first transport wheel for driving the disc to move along the loading path." Appellants disagree with the Examiner's stated position that the aforementioned feature is disclosed in Shindo. As explained *supra*, Shindo does not teach or suggest an obvious variant of such an information disc guide mechanism which guides the information disc by acting upon the disc edge. Rather, Shindo discloses a tray which carries the entire disc during the time it is transported as well as while it is being stored. Appellants further maintain that claim 6 is allowable because claim 6 depends from claim 1 which, as argued *supra*, is allowable.

Claim 9 includes the patentable feature of: "wherein a read/write unit is movably supported on a chassis plate of the apparatus." Appellants disagree with the Examiner's stated position that the aforementioned feature is disclosed in Shindo. As explained *supra*, Shindo does not teach or suggest an obvious variant of such an information disc apparatus wherein the read/write unit is supported on a chassis plate. Rather, Shindo discloses a read/write unit which is mounted on shaft (42) which is driven by a series of gears (See page 8, lines 22-27; and Figures 2 and 4). Shindo is vague as to whether the shaft is connected to the housing. Also, Shindo refers to element 42 both as a "belt" (page 7, line 23; Figure 2) and as a "shaft" (page 8, line 25; Figure 2). Appellants further maintain that claim 9 is allowable because claim 9 depends from claim 1 which, as argued *supra*, is allowable.

Claim 11 includes the patentable feature of: "wherein the read/write unit is movable into the play position in the vertical direction." Appellants disagree with the Examiner's stated position that the aforementioned feature is disclosed in Shindo. As explained *supra*, Shindo does not teach or suggest an obvious variant of such a read/write unit. Rather, Shindo discloses a read/write unit (17) which remains in the same fixed position, even though a portion of the read unit (60) is rotatable about a shaft (42). Appellants apparatus includes read/write unit (30) which is moved vertically in its entirety through the interactions of guide pins (31a, 31b, 31c, 41a) with sliders (44, 45, 46) and guideways (40, 41), respectively, as shown in Figures 7 and 8. See, specification page 11, lines 5-20. Further, Appellants further maintain that claim 11 is allowable because claim 11 depends from claim 1 which, as argued *supra*, is allowable.

In light of the preceding arguments, Appellants maintain that claims 3-6, 9, and 11 are in condition for allowance regardless of whether claim 1 is in condition for allowance.

Claim 20 includes the patentable feature of: "the discs can be immediately transported from the eject position to the play position without going through the loading position." Appellants disagree with the Examiner's stated position that the aforementioned feature is disclosed in Shindo. As explained *supra* with respect to claim 1, Shindo does not teach or suggest an obvious variant of an apparatus having this patentable feature. Additionally, since the Examiner presented arguments as being applicable to both claim 1 and claim 20, it therefore follows that Appellants' arguments presented *supra* for claim 1 also apply to claim 20.

2. Shindo in view of Umesaki

Inasmuch as claims 7, 8 and 12 have patentable features not included in claim 1, Appellants contend that claims 7, 8 and 12 are in condition for allowance regardless of whether or not claim 1 is in condition for allowance. Appellants note the patentable features of claims 7, 8 and 12 as follows.

Claim 7 includes the patentable feature of: "first transport mechanism further includes: a third guide for the disc edge and having a second transport wheel for driving the disc to move along the loading path; and a passive supporting guide as a fourth guide for the disc edge with a groove for supporting the disc moving along the loading path." Appellants traverse the Examiner's position that the aforementioned feature is taught or suggested by Shindo in view of Umesaki.

The Examiner stated that "Shindo does not disclose the guide mechanism as claimed, however an analogous guide mechanism is employed, including a first passive guide and a third guide. Umesaki discloses the usage of guide arms in the loading of the disc."

Appellants contend that neither Shindo nor Umesaki, taken alone or in combination, teach or suggest a "second transport wheel for driving the disc to move along the loading path." As shown in Appellants' Figure 1, the circular disc edge (1a) is driven by first transport wheel (25) of second guide (21). In Shindo, the disc is enclosed in a tray for transport and storage. Thus, the edge of the disc cannot be driven. In Umesaki, the disc is clamped into a guide arm, whereupon the guide arm is rotated to move the disc. Thus, neither Shindo nor Umesaki teach or suggest a guide having a transport wheel employed to transport an information disc.

Further, Appellants contend that there is no motivation to combine the teachings of Shindo and Umesaki. In Shindo, trays are used to transport each disc. In Umesaki, each disc is held in an arm, which arm is then rotated to carry the disc along with the arm. Appellants contend that it would be necessary to destroy the teachings of Shindo in order to combine the trays of Shindo with the arms of Umesaki, particularly since Shindo's trays are used to store as well as transport each disc, whereas Umesaki's guide arm is used solely to transport the disc.

Claim 8 includes the patentable feature of: "wherein the first and the third guide are mounted on a common pivot." Appellants note that this phrase should be amended to replace the word "first" with the word "second" per the specification, page 9, lines 6-9 and Figure 1. Nevertheless, Appellants traverse the Examiner's position that the aforementioned feature is disclosed by Shindo in view of Umesaki. Neither Shindo nor Umesaki, taken alone or in combination, teach or suggest "wherein the first and the third guide are mounted on a common pivot."

Claim 12 includes the patentable feature of: "wherein in the play position the first, second, third and fourth guides are pivoted away from the disc edge of the information disc, and

the pivoting away of the guides is controlled by the base plate of the read/write unit or a sliding plate.” Appellants traverse the Examiner’s position that the aforementioned feature is disclosed by Shindo in view of Umesaki. Neither Shindo nor Umesaki, taken alone or in combination, teach or suggest a mechanism wherein “the pivoting away of the guides is controlled by the base plate of the read/write unit or a sliding plate.” Appellants’ apparatus includes this feature as illustrated in, for example, Figure 5. In Figure 5 guide pins (31a, 31b, 31c, 41a) interact with sliders (44, 45, 46) and guideways (40, 41), respectively, in order to urge the pivoting away of the guides. See, for example, the specification at page 11, line 33 to page 12, line 5, which state the following (referring to Figure 10): “The pivoting away of the first guide 20, the second guide 21, the third guide 22 and the fourth guide 23 is controlled by the movement of the sliding plate 43, which performs a movement in the y direction between the second intermediate position and the play position. During this movement between the second intermediate position and the play position the sliding plate 43 urges the first guide 20, the second guide 21, the third guide 22 and the fourth guide 23 away from the information disc 1 against the pre-loading forces.”

In contrast, neither Shindo nor Umesaki, taken alone or in combination, teach or suggest such an arrangement. Rather, in Umesaki, guides (17) stationary while a lever (16) is used to move the traverse mechanism (1) vertically, which allows a disc to be inserted. See Umesaki specification, column 8, lines 23-58; and Figures 10 and 11.

Appellants further contend that it would be necessary to destroy the teachings of Shindo in order to combine the pivoting disc reader of Shindo with the stationary guides of Umesaki, particularly since Shindo’s disc reader is elevated above the base plate and is rotatably suspended above a cluster of gears and motors, thereby reducing the space available for linear vertical

movement.

Appellants also note that in Umesaki, the movement or pivoting of the guides occurs while the information disc is in the eject or access position. However, in Appellants' apparatus the guides are pivoted when the information disc is in the play position, so the guides are prevented from interfering with the reading of the information disc. Again, arranging the guides so they do not interfere with the disc reading position is not taught or suggested by Shindo or Umesaki, alone or in combination.

3. Shindo in view of Nakamichi

Inasmuch as claim 10 has patentable features not included in claim 1, Appellants contend that claim 10 is in condition for allowance regardless of whether or not claim 1 is in condition for allowance. Appellants note the patentable features of claim 10 as follows.

Claim 10 includes the patentable feature of: "wherein the read/write unit includes a base plate and a laser mounting plate, the base plate and the laser mounting plate are coupled by means of dampers, the base plate is slidably mounted on the chassis plate, and the laser mounting plate carries an optical unit for reading information stored on the information disc and a clamping device for clamping the information disc in the play position so that the read unit is isolated from vibrations of the chassis." Appellants traverse the Examiner's position that the aforementioned feature is taught or suggested by Shindo in view of Nakamichi.

The Examiner stated that "Shindo does not explicitly disclose related clamps and dampers." The Examiner further states that Nakamichi discloses "a changer apparatus characterized in that the read/write unit comprises a base plate and a laser mounting plate, the

base plate and the laser mounting plate are coupled by means of dampers.”

Appellants contend that neither Shindo nor Nakamichi, taken alone or in combination, teach or suggest “the base plate and the laser mounting plate are coupled by means of dampers, the base plate is slidably mounted on the chassis plate.” As shown in Appellants’ Figure 3, the dampers (32, 33, 34) are positioned between the base plate (31) and the laser mounting plate (35). Base plate (31) is slidably mounted to chassis plate (3), shown in Figure 1, via guide pins (31a, 31b, 31c). Therefore, base plate (31) is not fixedly attached to chassis plate (3). In contrast, in Shindo, the read/write unit (60) is rotatably mounted to a chassis plate via shaft (42) shown in Figure 4. Similarly, in Nakamichi, the read/write unit (200) is rotatably mounted to a chassis plate via pivot bracket (181), corner bracket (187) and pivot pin (188). In neither Shindo nor Nakamichi is there a base plate which is “slidably mounted” on a chassis plate as required by Appellants’ claim 10. Thus, Appellants submit that neither Shindo nor Nakamichi teach or suggest an information disc apparatus having all the features of Appellants claim 10.

4. Shindo in view of Clarion

Inasmuch as claims 13-18 have patentable features not included in claim 1, Appellants contend that claims 13-18 are in condition for allowance regardless of whether or not claim 1 is in condition for allowance. Appellants note the patentable features of claims 13-18 as follows.

Claim 13 includes the patentable feature of: “the loading position is in a central zone between the upper and the lower stacking zone; one of the holder compartments is each time movable into the loading position by rotation of the spindles, and the transport means move the information disc from the holder compartment, which is in the loading position, into the play

position and into the eject position." Appellants traverse the Examiner's position that the aforementioned feature is taught or suggested by Shindo in view of Nakamichi.

The Examiner stated that "Shindo does disclose spindles." The Examiner further states that Clarion discloses "Screwthreads (element 4 and 5) wherein the holder compartments are movable into a vertical direction by rotation of the spindles, there have been provided an upper stacking zone and a lower stacking zone of the stacking unit for stacking the holder compartments the loading position has been provided in a central zone between the upper and lower stacking zone, one of the holder compartments is each time movable into the loading position by rotation of the spindles, and the transport means are adapted to move the information disc from the holder compartment, which is in the loading position, into the play position and into the eject position." Appellants respectfully disagree with this analysis.

Appellants contend that neither Shindo nor Clarion, taken alone or in combination, teach or suggest "transport means move the information disc from the holder compartment, which is in the loading position, into the play position and into the eject position." As shown in Appellants' Figures 6, 9 and 12, the information disc is moved horizontally through three distinct positions by the transport means, namely an eject position, a play position, and a storage position. Further, the information disc is brought to the read/write unit, which remains fixed in a essentially unchanged horizontal location. In Shindo, the information disc is likewise transported horizontally through three positions, but in a different sequence, and the read/write unit again remains stationary. In Clarion, however, the read/write unit or "pick-up member 7 moved with a pick-up moving means 60 is inserted into trays 6a to 6d corresponding to spacing parts 4a, 5b provided on the mid-way of the rotating axeses [sic] 4, 5." See Clarion, Abstract, lines 7-9.

Thus, in Clarion, the information disc remains in fixed horizontal location while it is the read/write unit that is transported to the disc, which is the inverse operation of Shindo.

Thus, Appellants submit that it would not have been obvious to one of ordinary skill in the art to combine the teachings of Shindo with those of Clarion, since each reference represents an opposing construction philosophy. That is, Shindo moves the disc while keeping the read/write unit stationary. In contrast, Clarion keeps the disc stationary while moving the read/write unit. Indeed, Clarion states that its construction is superior to Shindo's because "the number of parts is reduced and the medium D in a low cost and a compact size is reproduced since the reproducing is performed by using one tray moving means 50." See Abstract, lines 10-12.

Appellants further submit that neither Shindo nor Clarion provide motivation to one skilled in the art to attempt combine the respective mechanisms, and the Examiner is without evidence to support the combination, particularly in the face of the contrary teachings in Shindo in view of Clarion. More specifically there is no motivation to combine the linear, in-and-out disc travel path of Clarion with the curved path of Shindo. Nor does either reference provide motivation to combine the stationary read/write unit of Shindo with the rotatable read/write unit of Clarion. In each case, the combination would require the teachings of at least one reference to be destroyed.

Based on either of the preceding arguments, in light of the mechanical structures of Shindo and Clarion, Appellants' respectfully submit that attempts to combine these two references amount to unacceptable hindsight construction, and further submit that the Examiner cannot combine Shindo and Clarion to support an obviousness rejection of claim 13.

Claim 14 includes the patentable feature of: "wherein in the axial direction of the spindles the central zone has spacing zones at both sides of the loading position, which spacing zones define an axial spacing between the holder compartment in its loading position and the axially adjacent holder compartments in their stacking positions."

The Examiner stated that Clarion discloses a disc changer apparatus wherein the spindles have spacing zones at both sides of the loading position, which spacing zones define an axial spacing between the holder compartment in its loading position and the axially adjacent holder compartments in their stacking positions. Appellants respectfully disagree with this analysis. In Clarion, discs may be inserted or loaded into any empty disc tray, regardless of where the empty tray is located in the stack of trays. The axial spacing in Clarion is provided so that the read/write unit may access a particular disc. The access by the read/write unit is independent of the loading position of the tray. Thus, the axial spacing disclosed in Clarion is completely unrelated to the loading position of the tray. Appellants disagree with the Examiner's stated position that the aforementioned apparatus arrangement is disclosed in Clarion.

Claim 15 includes the patentable feature of: "wherein the average screw thread pitch of the spindles in the loading position is smaller than the average screw thread pitch in the upper and the lower stacking zone." Appellants maintain that Clarion does not disclose a spindle having a screw thread pitch which is relevant when the disc or tray is in the loading position.

Claim 16 includes the patentable feature of: "wherein the screw thread pitch of the spindles in the loading position is essentially zero." Appellants maintain that Clarion does not disclose a spindle having a screw thread pitch which is relevant when the disc or tray is in the loading position.

Claim 17 includes the patentable feature of: "wherein the average screw thread pitch in the spacing zones is greater than the average screw thread pitch in the upper and the lower stacking zone." Shindo utilizes a positioning cam to raise and lower the disc trays, while Clarion relies on threaded spindles. In light of the mechanical structures of Shindo and Clarion, Appellants' respectfully submit that attempts to combine these two references amount to unacceptable hindsight construction, and further submit that the Examiner cannot combine Shindo and Clarion to support an obviousness rejection of claim 17.

Claim 18 includes the patentable feature of: "wherein there is provided a lower and an upper guide pin for guiding the information discs into the holder compartments of the stacking unit, which guide pins are engageable into the center holes of the information discs from above and from below, respectively." Shindo discloses a single stabilizing post suspended vertically from the upper plate of the apparatus. Clarion is completely silent regarding a guide pin engaging the center hole of the information discs. In light of the mechanical structures of Shindo and Clarion, Appellants' respectfully submit that attempts to combine these two references amount to unacceptable hindsight construction, and further submit that the Examiner cannot combine Shindo and Clarion to support an obviousness rejection of claim 18.

Conclusion

In summary, based on the preceding arguments, Appellants respectfully believe that claims 1, 3-6, 9, 11, and 20 are unobvious over Shindo, that claims 7, 8 and 12 are unobvious over Shindo in view of Umesaki, that claim 10 is unobvious over Shindo in view of Nakamichi, that claims 13-18 are unobvious over Shindo in view of Caledonia, and that all claims meet the

criteria for allowance. Thus, Appellants respectfully request reversal of the 35 U.S.C. §103(a) rejections of all rejected claims.

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant(s) : **Haupt *et al.***
Appl. No. : **09/090,035**
Filed : **06/10/1998**
Title : **Changer Apparatus for Information Discs**
Art Unit : **2153**
Examiner : **T. Kupstas**
Dkt. No. : **PHD 97-074A**

APPENDIX - CLAIMS ON APPEAL

1. 1. (thrice amended) A changer apparatus for information discs, comprising:
 2. a stacking unit for stacking at least two information discs in respective stacking positions;
 3. a read/write unit for reading information stored on the information discs and/or writing information on the information discs in a play position;
 5. an eject position at which an information disc can be removed from the apparatus; and
 6. transport means for transporting the information discs from the eject position into a
 7. loading position along a curve-shaped loading path, the loading position being a position for
 8. loading discs from the loading path of the transport means into the stacking positions of the
 9. stacking unit;
10. and in which the play position is along the loading path between the eject position and the
11. loading position.

1 3. (twice amended) The apparatus of Claim 1, wherein the play position is offset from a
2 direct connecting line between the loading position and the eject position.

1 4. (twice amended) The apparatus of Claim 1, wherein the play position is disposed on the
2 loading path.

1 5. (thrice amended) The transport means of Claim 1, including a first transport mechanism
2 for transporting the information discs between the eject position, the play position and the
3 loading position, and a second transport mechanism for transport of the information discs from
4 the loading position into the stacking positions of the stacking unit, the first transport mechanism
5 moves the information discs in the loading plane and the second transport mechanism moves the
6 information discs in a stacking direction oriented vertically with respect to the loading plane.

1 6. (thrice amended) The apparatus of Claim 5, wherein the first transport mechanism
2 includes at least a first and a second guide for the disc edge of the information disc, the first
3 guide includes a groove for supporting the disc moving along the loading path and the first guide
4 is movable in the loading plane, the second guide includes at least one rotationally drivable first
5 transport wheel for driving the disc to move along the loading path.

1 7. (thrice amended) The apparatus of Claim 6, wherein:
2 the first guide is a passive supporting guide;
3 the first transport mechanism further includes: a third guide for the disc edge and having

4 a second transport wheel for driving the disc to move along the loading path; and a passive
5 supporting guide as a fourth guide for the disc edge with a groove for supporting the disc moving
6 along the loading path;

7 the first, the second, the third and the fourth guides include one or more pivotal arms
8 which are supported at one end and which are pivotable in the loading plane;

9 the first, the second, the third and the fourth guides are pre-loaded towards the curve-
10 shaped loading path;

11 the first transport wheel moves the information discs between the eject position and a
12 transfer position and the second transport wheel moves the information discs from the transfer
13 position into the loading position.

1 8. (twice amended) The apparatus of Claim 7, wherein the first and the third guide are
2 mounted on a common pivot.

1 9. (thrice amended) The apparatus of Claim 1, wherein a read/write unit is movably
2 supported on a chassis plate of the apparatus.

1 10. (thrice amended) The apparatus of Claim 9, wherein the read/write unit includes a base
2 plate and a laser mounting plate, the base plate and the laser mounting plate are coupled by
3 means of dampers, the base plate is slidably mounted on the chassis plate, and the laser mounting
4 plate carries an optical unit for reading information stored on the information disc and a
5 clamping device for clamping the information disc in the play position so that the read unit is

6 isolated from vibrations of the chassis.

1 11. (twice amended) The apparatus of Claim 9, wherein the read/write unit is movable into
2 the play position in the vertical direction.

1 12. (twice amended) The apparatus of Claim 9, wherein in the play position the first, second,
2 third and fourth guides are pivoted away from the disc edge of the information disc, and the
3 pivoting away of the guides is controlled by the base plate of the read/write unit or a sliding
4 plate.

1 13. (thrice amended) The apparatus of Claim 1, wherein
2 the stacking unit comprises at least two holder compartments for holding one information
3 disc each;
4 the holder compartments are coupled to at least one threaded spindle and are movable
5 into a vertical direction by rotation of the spindles;
6 there is provided an upper stacking zone and a lower stacking zone in the stacking unit
7 for stacking the holder compartments;
8 the loading position is in a central zone between the upper and the lower stacking zone;
9 one of the holder compartments is each time movable into the loading position by
10 rotation of the spindles, and the transport means move the information disc from the holder
11 compartment, which is in the loading position, into the play position and into the eject position.

1 14. (twice amended) The apparatus of Claim 13, wherein in the axial direction of the spindles
2 the central zone has spacing zones at both sides of the loading position, which spacing zones
3 define an axial spacing between the holder compartment in its loading position and the axially
4 adjacent holder compartments in their stacking positions.

1 15. (twice amended) The apparatus of Claim 13, wherein the average screw thread pitch of
2 the spindles in the loading position is smaller than the average screw thread pitch in the upper
3 and the lower stacking zone.

1 16. (twice amended) The apparatus of Claim 13, wherein the screw thread pitch of the
2 spindles in the loading position is essentially zero.

1 17. (twice amended) The apparatus of Claim 13, wherein the average screw thread pitch in
2 the spacing zones is greater than the average screw thread pitch in the upper and the lower
3 stacking zone.

1 18. (twice amended) The apparatus of Claim 13, wherein there is provided a lower and an
2 upper guide pin for guiding the information discs into the holder compartments of the stacking
3 unit, which guide pins are engageable into the center holes of the information discs from above
4 and from below, respectively.

1 19. The apparatus of claim 1 in which the overall depth of the apparatus is less than or equal
2 to approximately 1.5 times the information disc diameter.

1 20. A changer apparatus for information discs, comprising:
2 a stacking unit for stacking at least two information discs in different respective stacking
3 positions;
4 a read/write unit for reading information stored on the information discs and/or writing
5 information on the information discs in a play position;
6 an eject position at which an information disc can be inserted and removed from the
7 apparatus; and
8 transport means for transporting the information discs from the eject position into a
9 loading position along a curve-shaped loading path, the loading position being a position for
10 loading discs from the loading path of the transport means into the stacking positions of the
11 stacking unit;
12 and in which the discs can be immediately transported from the eject position to the play
13 position without going through the loading position.